

## Believing is seeing: how people's beliefs influence goals, emotions and behaviour

Pim W Teunissen<sup>1,2</sup> & Harold G J Bok<sup>3</sup>

**INTRODUCTION** Health care professionals work and learn in complex environments. Some are able to continue learning from their practice and the challenges it presents, whereas others refrain from investing more effort when faced with setbacks. This paper discusses a social cognitive model of motivation that helps to explain the different kinds of behaviour that emerge when individuals are confronted with challenges.

**SELF-THEORIES** Self-theories (people's theories on what competence is and means for the self) play a major role in establishing the goals people set for themselves, the emotions they experience and the meanings they attach to situations. These self-views are often not explicitly articulated and are therefore called 'implicit' ('self-') theories. Social cognitive research suggests there are two distinct ways of thinking about one's personal attributes: *entity theorists* view a trait as a fixed, concrete internal entity, whereas *incremental theorists* instead believe a trait to be something malle-

ble that can be developed or cultivated through effort. Holding an entity theory leads one to set performance goals and to harbour concerns about performing well and making a good impression. Holding an incremental theory tends to lead one to set learning goals, and to focus less on performance and more on spending time and effort in determining which strategies work.

**DISCUSSION** The current literature on self-theories is used to explore the relevance of these theories in medical education in three contexts: (i) it is argued that, in order to support lifelong learning, both individual and organisational efforts fit best with an incremental outlook on professional development; (ii) if it is to move forward in the domain of feedback-seeking behaviour, medical education might benefit from a better understanding of the interactions among self-theories, feedback behaviour, and the pervading role of organisational culture, and (iii) the impact of self-theories on assessors' evaluations of performance.

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<sup>1</sup>Department of Educational Development and Research, Faculty of Health, Medicine and Life Sciences, Maastricht University, Maastricht, the Netherlands

<sup>2</sup>Department of Obstetrics and Gynaecology, VU University Medical Centre, Amsterdam, the Netherlands

<sup>3</sup>Quality Improvement in Veterinary Education, Faculty of Veterinary Medicine, Utrecht University, Utrecht, the Netherlands

*Correspondence:* Pim W Teunissen, Department of Educational Development and Research, Faculty of Health, Medicine and Life Sciences, Maastricht University, PO Box 616, 6200 MD Maastricht, the Netherlands. Tel: 00 31 20 404 2120;  
E-mail: [pwteunissen@gmail.com](mailto:pwteunissen@gmail.com)

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 INTRODUCTION

The practice of medicine is challenging: doctors make decisions in highly complex situations, basing these decisions on different sources of often-contested information, with limited evidence as to how their actions will affect individual patients, in contexts in which the stakes are high and may be potentially life-changing or even life-ending. Not surprisingly, learning to become a doctor is just as challenging. In facing difficult situations, from taking a history for the first time to performing complex surgery or learning how to be a supervisor, some learners thrive; they persist and appear to be highly motivated to succeed. Other learners give up after failure. They refrain from investing further effort and may appear unmotivated.<sup>1,2</sup> In an attempt to better understand such variability, this paper discusses a social cognitive model of motivation that helps to explain this divergence in behaviour and explores the potential this model holds for the advancement of medical education.

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 SELF-THEORIES

Based on research on students' reactions to failure, Dweck noted two patterns of behaviour, which were, respectively, helpless and mastery-oriented.<sup>3</sup> Children with a helpless response to challenging situations tended to 'denigrate their abilities and blame their intelligence for failures, saying things like "I guess I'm not very smart" [...] and "I'm no good at things like this"'.<sup>3</sup> By contrast, those with a mastery-oriented response did not blame anything because they did not seem to experience failure. Instead, these learners 'engaged in some form of self-instruction or self-monitoring designed to aid their performance' and remained confident about their ability to succeed.<sup>3</sup> In trying to explain these findings, Dweck and other scholars developed the idea that these responses resulted from different ways of thinking about one's personal attributes, such as intelligence.<sup>3</sup> Labelled 'self-views', these ways of thinking are often not explicitly articulated and are therefore called 'implicit' (or 'self-') theories.<sup>4</sup> Linked to a helpless response pattern is *entity theory*, which holds that an individual views a trait as a fixed, concrete internal entity. One either has the ability to perform successfully in a certain task or one doesn't. *Incremental theorists*, by contrast, believe a trait to be malleable and to be something that can be developed or cultivated through effort. Notwithstanding the roughly 20% of individuals who fit

partially into both groups, most research finds that individuals are equally divided into either entity or incremental theorists.<sup>4</sup> This is not to say that individuals hold the same implicit theory with regard to all of their attributes. Just as with expertise in medicine, implicit theories are domain-specific, so that, for example, a person can hold an entity theory on personality and an incremental theory on intelligence.<sup>5</sup>

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 FROM SELF-THEORIES TO GOALS

This theory posits that the goals students have in a specific situation form the link between their self-theory and their helpless or mastery-oriented behaviour. Holding an entity theory, a fixed view on personal attributes, leads students to be overly concerned with performing well and making a good impression. This approach to performance is said to be part of a *performance goal* orientation. Several studies have shown that if participants believe 'they had a fixed amount of intelligence [...] they had better demonstrate that they had a lot of it'.<sup>4</sup> A performance goal is about winning positive and avoiding negative judgements of one's competence. Individuals with such an orientation 'minimise their effort expenditure, give up easily when faced with challenges or drawbacks, and generally avoid tasks they might have difficulties mastering'.<sup>6</sup> By contrast, those with an incremental theory place less focus on performance, but are more concerned with gaining new knowledge and skills (i.e. with learning).<sup>7,8</sup> By trying to increase their competence, they espouse a *learning goal* orientation and are willing to spend time and effort in finding out which strategies work. In doing so, they persist and overcome sometimes inevitable setbacks.<sup>6,9</sup> These two goal orientations align with Van Dijk and Kluger's description of prevention or promotion focus as an explanation for motivation, which forms part of self-regulation theory.<sup>10</sup> Several studies have linked goal orientation to behaviour in settings ranging from sports to music and academia. For instance, Dupeyrat and Mariné applied Dweck's concepts of goal orientations to French adults returning to school.<sup>6</sup> They found that learning goals were related to the use of deep processing strategies and effort. Performance goals led to more shallow processing strategies.

In medicine, in which performance influences a patient's well-being, there are arguably many situations in which seeing something solely as a learning opportunity is unacceptable and having a performance goal is not necessarily negative, although research on for whom and under what circum-

stances it may have positive effects is contradictory.<sup>11</sup> The problem with a performance goal orientation arises when the focus on showing ability becomes so important that it eliminates learning goals.<sup>3</sup> Thus, in medicine, holding either a performance or learning goal orientation exclusively can be problematic given that tasks in this field of endeavour are dynamic and complex, professionals are required to perform well for the good of their patients and at the same time to learn new skills on a continuous basis, and (student) doctors must be able to transfer skills to new tasks.<sup>12</sup>

In the domain of research on feedback-seeking behaviour, VandeWalle and others further developed the concepts of goal orientation in laboratory experiments and field studies.<sup>13,14</sup> For someone with a learning goal, feedback is useful information that helps to correct errors and achieve mastery.<sup>13,14</sup> However, for those with a performance goal, feedback is a judgement about the self and potentially indicates inadequate ability, especially when the judgement is negative.<sup>15</sup> VandeWalle recognised that a performance goal has two sub-dimensions. One of these, he argued, is 'a *proving goal orientation* consisting of an individual's desire to demonstrate competence and to gain favourable judgements about it', whereas the other is 'an *avoiding goal orientation* consisting of an individual's desire to avoid negation of one's competency and to avoid negative judgements about it'.<sup>16,17</sup>

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#### FROM GOALS TO BEHAVIOUR, EMOTIONS, MEANING AND LEARNING

Goal orientations affect behaviour in challenging situations and will influence the meaning attached to situations. This outlook fits within a constructivist perspective on learning that acknowledges that learning entails creating an idiosyncratic version of reality. One's reality will converge with that of others on many counts, but it may also be significantly divergent as a result of differences in previous experiences, differences in interpretation, and variable ways in which previous experiences impact future behaviour.<sup>18</sup> What self-theories do, mediated by the goals they instil, is influence how the outcomes of a situation are perceived, which emotions are elicited and what people will take with them into new situations.<sup>4</sup> In an entity theory framework, a setback is an indicator of incompetence. In an incremental theory framework, a setback indicates which strategy doesn't work. An example of the influence of self-theories on emotions comes from the research conducted by Robins and Pals among undergradu-

ate students at the University of California at Berkeley.<sup>19</sup> They performed six assessments of students over a 4-year period. Among the 363 students who provided complete data, path analysis showed that entity theorists, who usually adopted performance goals, declined in self-esteem during college, whereas incremental theorists, who usually adopted learning goals, increased in self-esteem.<sup>19</sup> Compared with incremental theorists, entity theorists were more likely to feel distressed, ashamed and upset about their academic performance. Incremental theorists were more likely to feel determined, enthusiastic, excited, inspired and strong. With respect to study outcomes, Robins and Pals found that the entity theorists in their sample had greater academic ability, but that this did not translate to higher academic achievement.<sup>19</sup> The studies that have found a link from self-theory to goals to grades indicate that students with a learning goal orientation tend to use deeper learning strategies and engage in active self-regulation of their motivations and emotions.<sup>4,20</sup> This demonstrates how, over time, self-theories and goal orientation can influence a person's meaning system in such a way that it affects how he or she feels, what he or she does and how he or she develops. The theoretical concepts of self-theories and the body of research in this field might facilitate a better understanding of some of medical education's biggest challenges, such as keeping students motivated and helping them to develop into intrinsically motivated lifelong learners, a status that requires an incremental outlook on learning.<sup>21</sup> The risk for propagating, knowingly or unknowingly, an entity theory-based outlook on learning as a medical community has been illustrated clearly by Papadakis *et al.*<sup>22</sup> They found that doctors subjected to disciplinary action by medical boards were strongly associated with two types of unprofessional behaviour in medical school, namely, behaving irresponsibly or demonstrating a diminished ability for self-improvement.<sup>22</sup> Examples of this second type of behaviour were 'failure to accept constructive criticism, argumentativeness, and display of a poor attitude'.<sup>22</sup>

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#### RELEVANCE OF SELF-THEORIES IN MEDICAL EDUCATION

To explore how the concept of self-theories might shed new light on current issues in medical education, we highlight three areas of current focus in which the concepts of self-theories and goal orientations have either been applied or seem especially relevant. These domains refer to: the supporting of lifelong learning; feedback-seeking behaviour, and

the influence of self-theory on assessors' evaluations of performance.

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#### SUPPORTING LIFELONG LEARNING

Within the medical domain it is clear that a 'central component of physician competence is professionalism, which requires lifelong learning that leads to improved performance in practice'.<sup>23</sup> How lifelong learning can be developed and supported is, however, not so clear. Although programmes of continuing medical education (CME) aim to help doctors stay informed about the latest knowledge and techniques, actual performance in practice depends more on practice-based learning than on transfer from formal CME-based activities.<sup>21</sup> Doctors encounter problems daily that require their expertise and sometimes need innovative solutions.<sup>24</sup> However, research shows that just practising medicine a lot is not sufficient<sup>25</sup> because professionals only continue to learn from experience if they succeed in recognising areas in which they need to improve, formulate learning goals and obtain accurate feedback on their performance.<sup>21,26</sup>

The literature on lifelong learning in medicine focuses on self-assessment as the starting point for learning.<sup>26,27</sup> Doctors need to recognise a need to change their behaviour, knowledge base or skills. According to Duffy and Holmboe, self-assessment 'requires that the physician develops a judgement about his or her grade of performance' and can therefore be more accurately described as self-evaluation.<sup>23</sup> Many papers on self-assessment, self-evaluation and their pitfalls have been published.<sup>27</sup> Most conceptualise the issue as the judging of performance against some standard in order to assess whether or not the performance is good enough.<sup>28</sup> This way of problematising the starting point for learning fits with an entity-based outlook; it carries the message that learning is not a lifelong enterprise, but, rather, is something one is compelled to consider when problems arise.

The concepts of self-theories and their associated goals and behaviours offer different ways to approach the issue of supporting lifelong learning. Research on the effects of learning and performance goals has demonstrated that learning goals are related to greater effort expenditure and persistence and to the use of deep learning strategies.<sup>6,29</sup> Specifically, when the tasks are complex, learning goals lead to better performance and more effective problem-solving strategies than performance goals.<sup>30</sup>

Overall, performance goals seem to be related to the use of shallow processing strategies and are not associated with effort and persistence.<sup>6,31</sup> These goals can also be linked to work avoidance, which amounts to attempting to complete one's work with a minimal amount of effort.<sup>6,32</sup> This begs the question of whether or not one can be moved from one self-theory to another. As self-theories have an important impact on an individual's meaning system, changing that person's beliefs about the malleability of intelligence may have substantial effect. Indeed, several studies on this issue show that relatively modest interventions that boost students' valuation 'of learning and improvement, and their belief in the efficacy of their efforts' can lead to marked changes.<sup>7,33</sup> Good *et al.* performed a field study in which they taught high school adolescents an incremental outlook on learning.<sup>34</sup> The intervention required all the students in the study to be given a college student mentor who conveyed an incremental theory of intelligence as part of a computer course. Students created their own web pages, on which they 'advocated, in their own words and pictures, the experimental messages [they] were learning from their mentors'.<sup>34</sup> The results of these students on a standardised, state-wide reading and mathematics achievement test were compared with those of a group of students who were also mentored and who also created web pages, but, in the latter case, about the dangers of drug use. The incremental theory groups scored significantly higher on both outcome measures than the control group.<sup>34</sup> In an experiment with African American college students, Aronson *et al.* showed that students who supposedly participated in a pen pal programme in which they wrote letters to middle school students about the malleability of intelligence and participated in similar 'attitude change techniques designed to teach them, help them internalise, and make cognitively available the notion that intelligence is expandable' found that the process led 'to greater enjoyment of the academic process, greater academic engagement, and higher grade point averages' compared with students in a control group.<sup>35</sup> Thus, an incremental theory and learning goals can be fostered.

With respect to doctors' lifelong learning behaviour, instilling a learning goal orientation rather than focusing on the level of performance as an indication for the need to learn should lead to better long-term outcomes in the health care system. Students and doctors tend to be socialised towards believing that expertise is about mastering efficient modes of working (performance goal) instead of

(also) being enabled to continue to learn from everyday practice.<sup>24,36</sup> Nonetheless, their dominant goal orientation may still be influenced to incorporate more learning goals into their practice.<sup>4</sup>

That said, to effectively support lifelong learning, focusing on the goals of individual practitioners is likely to be insufficient. The culture of health care systems needs to make reflection and continuous learning from practice the norm. Over 10 years ago, Frankford *et al.*<sup>37</sup> recognised the need to establish institutions of reflective practice in which professionals are helped to take time to recognise the potential for improvement in their own practice, to share their successes and challenges with colleagues, and to learn from their own and one another's outcomes. They state: '...if the organisation makes this process overt, it has enormous power to promote the lifelong development of the medical professionals who work within it.'<sup>37</sup> A decade later, we still struggle to move beyond our perception of lifelong learning as an individual endeavour.<sup>38,39</sup> What happens when an organisational climate fosters predominantly performance goals? Here, also, psychological research offers some interesting leads. The characteristics of a performance-oriented environment lead to poor affective outcomes among performance-oriented individuals, even when they have worked hard enough to show they have the ability they require to succeed, and demotivate those with a learning goal from investing effort in learning.<sup>40,41</sup> For instance, El-Alayli and Baumgardner combined concepts about implicit theories and motivational climate to study the effects of a simulated context that emphasised only performance goals.<sup>41</sup> They built their hypothesis on the idea that a person with an entity theory might actually do well in a climate in which performance goals were emphasised because these goals give an individual the opportunity to demonstrate his or her abilities.<sup>3</sup> Indeed, they found that entity theorists worked harder than incremental theorists.<sup>41</sup> Because such an environment does not cater to the wishes of the incremental theorist to be able to learn, such an individual will disengage. Interestingly, however, research has also shown that under such conditions *entity* theorists experienced worse affect than *incremental* theorists in that, for instance, they felt greater self-doubt and dissatisfaction, perhaps as a result of a perceived lack of control over the situation.<sup>40,41</sup> This illustrates how important and difficult it is to create an environment that promotes lifelong learning.

In summary, lifelong learning and research on how best to support this hallmark of professionalism could

benefit from insights provided by research on implicit theories. The potential benefits of such insights might extend in impact from the level of understanding individual motives to the level of the organisational culture that promotes or hinders this kind of behaviour.

### Self-theories and learners' feedback-seeking behaviour

Feedback is important, not only for lifelong learning behaviour, but for learning at any moment in the medical continuum.<sup>42</sup> It encourages students and doctors to evaluate their performance and aims to reduce discrepancies between actual and desired performance.<sup>43,44</sup> Clinical workplaces in particular are settings in which the active seeking of feedback is of crucial importance given the complexity of the environment, the dominant focus on patient issues, and the infrequency with which good, systematic data on performance are spontaneously made available. Although research within medical education is starting to look into the role of practitioners as active seekers of feedback, this issue is still under-explored. The concept of self-theories may be instrumental in furthering understanding of this topic.

In the past 30 years, practitioners in the fields of social and organisational psychology have been conceptualising learners as active agents in feedback seeking.<sup>45</sup> The term 'feedback-seeking behaviour' refers to 'processes involved in inviting feedback' based on three primary motivators: the desire for useful information (the instrumental motive); the desire to defend or enhance one's ego (the ego-based motive), and the desire to protect or enhance the impressions others hold of one's image (the image-based motive).<sup>46</sup> Empirical research has led to further development of a model that clarifies the processes and outcomes of feedback-seeking behaviour.<sup>12</sup> This research revealed an important mediating role of an individual's analysis of the perceived benefits or costs to his or her ego and image on the potential informational value of feedback.<sup>47</sup> The outcome of a cost-benefit analysis will influence specific feedback-seeking behaviour characterised by the following five elements: source; topic; timing; frequency, and method.<sup>48</sup> In line with the discussion presented in this paper, several studies have found that the perceived values and costs of feedback seeking are influenced by a person's goal orientations because various studies have found that self-theories and their associated goal orientations have strong impact on feedback-seeking behaviour.<sup>46,48</sup> For instance, in a study of employees in five organisations (e.g. employees of a local newspa-

per), Klich and Feldman found that performance-oriented individuals showed a negative relationship with the seeking of feedback from expert sources.<sup>49</sup> This effect arises from the link between a person's dominant belief about the extent to which certain attributes are malleable and the context-dependent goals that person sets for him or herself. Individuals have generally been found to seek feedback more frequently and to perceive it to have more potential benefits than costs when the perceived informational value increases (instrumental value).<sup>50,51</sup> This assessment of the potential information value is influenced by goal orientation.<sup>46</sup> Performance-oriented individuals tend to perceive feedback as a judgement of the self, and may suffer ego or image costs when hearing about their lack of skills. Ashford and Fedor *et al.* both reported field studies indicating a negative relationship between the frequency of feedback-seeking behaviour and perceived self-presentation costs.<sup>52,53</sup> Feedback-seeking behaviour is perceived by entity theorists as potentially able to reveal uncertainty and to draw attention to one's incompetence. By contrast, performance-oriented individuals tend to seek feedback when it has potential value to their ego or image.<sup>54</sup>

In recent years, medical educators have begun to focus attention on feedback-seeking behaviour and its relation to self-theories. In a field study conducted among 170 medical residents Janssen and Prins studied how goal orientations influenced residents in the way they sought information.<sup>55</sup> They found that, depending on their goal orientation, residents had either a positive or a negative attitude towards seeking self-improvement and self-validation information. Surprisingly, in this study a performance-avoidance goal orientation turned out to be positively related to seeking self-improvement information, possibly because 'the fear of performing worse than others encourages performance-avoidance-oriented employees to seek feedback information ... for improving their achievements'.<sup>55</sup> In a study carried out by survey, Teunissen *et al.* found that residents' feedback-seeking behaviour was influenced by the attending doctor's supervisory style and the resident's goal orientation.<sup>56</sup> These two variables influenced the perceived benefits and perceived negative effects of feedback and thereby affected the way in which residents actively sought task or self-relevant information. Bok *et al.* performed a qualitative exploration of factors influencing feedback-seeking behaviour in undergraduate clinical rotations.<sup>57</sup> In line with the findings of other research, goal orientations and their underlying self-theories appeared to be important

motivators of feedback-seeking behaviour within the clinical workplace.<sup>47,48,57</sup>

To conclude, understanding the motivations and goals of learners who seek self-relevant information is paramount to the improvement of learning in the medical domain. Research indicates that the concepts of self-theories and their associated goal orientations play an important role in learners' feedback-seeking behaviour, but many unexplained phenomena persist.<sup>48</sup> To move forward in this area, medical education might benefit from a better understanding of the interactions among self-theories, feedback-related behaviour and the pervading role of organisational culture.

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#### SELF-THEORIES AND ASSESSORS' EVALUATIONS OF PERFORMANCE

In clinical settings, professional competence is usually assessed through observations, which can be formalised by using workplace-based assessment (WBA) instruments. Such assessment is integrated in clinical learning and working processes, targeting the upper levels of Miller's pyramid.<sup>58</sup> In recent years, assessment approaches have changed so that assessment is no longer viewed simply as an evaluation of learning, but the assessment process is regarded as part of an educational context that aims to stimulate learning and self-directed development.<sup>59</sup> Recent studies have shown that the quality of those performance evaluations, in terms of providing constructive feedback to learners, varies significantly and is determined by the assessor to a greater extent than by the instrument that is being used.<sup>60</sup> Which individual characteristics influence performance evaluations by clinical assessors is unclear.<sup>61</sup> Here, again, the literature on self-theories provides some interesting leads for further research.

The literature on the influence of assessors' self-theories on evaluations of performance indicates that assessors' (implicit) beliefs impact their judgements and their expectations of the performer's future behaviour.<sup>62-64</sup> In two studies by Erdley and Dweck, schoolchildren were presented with a case portraying a boy who displayed negative behaviour and were subsequently asked to rate how well different personality traits described the boy they had observed.<sup>65</sup> The researchers found that children with entity-based beliefs made more generalised negative trait evaluations (e.g. bad, mean), judged behaviour as more consistent over time, showed less empathy and recommended more punishment.

However, children with dominant incremental beliefs gave more lenient judgements and took positive information into account when rating negative behaviour.<sup>65</sup> These results suggest a relationship between assessors' implicit theory, performance evaluations and expectations of future behaviour. Extending these findings to undergraduate college students, Chiu *et al.* conducted five studies to explore the relationships between people's self-theories and inferences based on observation of behaviour implying certain traits.<sup>62</sup> They found that entity theorists 'used traits or trait-relevant information to make stronger future behavioural predictions and made stronger trait inferences from behaviour' than incremental theorists.<sup>62</sup> Based on limited behavioural information, entity theorists felt confident to project their observations on individuals' general behaviour. In line with this, Gerverey *et al.* conducted three studies with undergraduate students in which they showed that entity theorists are more confident in predicting long-term behaviour and attach greater predictive value to inferences related to personal characteristics than do incremental theorists, who take more situational information into account.<sup>66</sup> Hong *et al.* showed that incremental theorists, believing that personal attributes are malleable, will not assign strong predictive value based on a single observation of traits, but tend to focus on aspects that might have mediated performance, such as goals, expectancies and psychological conditions.<sup>63</sup>

This difference in perspective when making an assessment aligns well with, for example, the debate on how to evaluate professionalism in medicine. In their overview of the literature on assessment of professionalism in 2000, Ginsburg *et al.*<sup>1,67</sup> called for a focus on context and understanding of conflict in making relevant and valid evaluations of professionalism; discussion on how to do this is ongoing.<sup>68</sup> The literature on assessors' self-theories may add to this discussion and the future development of models of assessment for learning in general.<sup>58</sup> A number of questions arise concerning the way in which assessors' implicit self-theories may influence their evaluations of performance. Arguably, those with dominant incremental beliefs might be more likely to provide supportive feedback, including advice on how to bridge the gap between an observed and a desired level of performance. When assessors believe that personal abilities are fixed, investing time and effort in helping the learner change seems less worthwhile. This latter notion does not fit well with assessment for learning, which is based on the belief that individuals have the potential to develop their abilities and

improve their performance. These hypotheses lead to some interesting research questions. What are the effects of assessors' implicit theories on the evaluative feedback they provide in assessment for learning programmes? Will entity theorists formulate less specific, more negative and more trait-oriented feedback, in comparison with incremental theorists? Will entity theorists feel more confident in judging the future performance of individual students based on a single observation?

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## CONCLUSIONS

This paper has reviewed current insights on implicit self-theories and their effects on goals, behaviour and learning processes. Using current models from the field of social cognition, we have discussed the relevance of self-theory concepts for supporting lifelong learning in the medical domain, understanding learners' feedback-seeking behaviour, and elucidating the influence of self-theory on assessors' evaluations of performance. The effects of either a learning or a performance goal orientation on behaviour and developmental processes are complex and seldom unequivocal. The domain-specific nature of these beliefs, task characteristics, and organisational and cultural influences all affect this process. What seems evident is that health professionals and trainees will need to balance the delivery of high-quality practice with the requirement to continuously learn from practice. In our opinion, medical education could make more use of the literature on self-theory in research and education to support practitioners in this balancing act.

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